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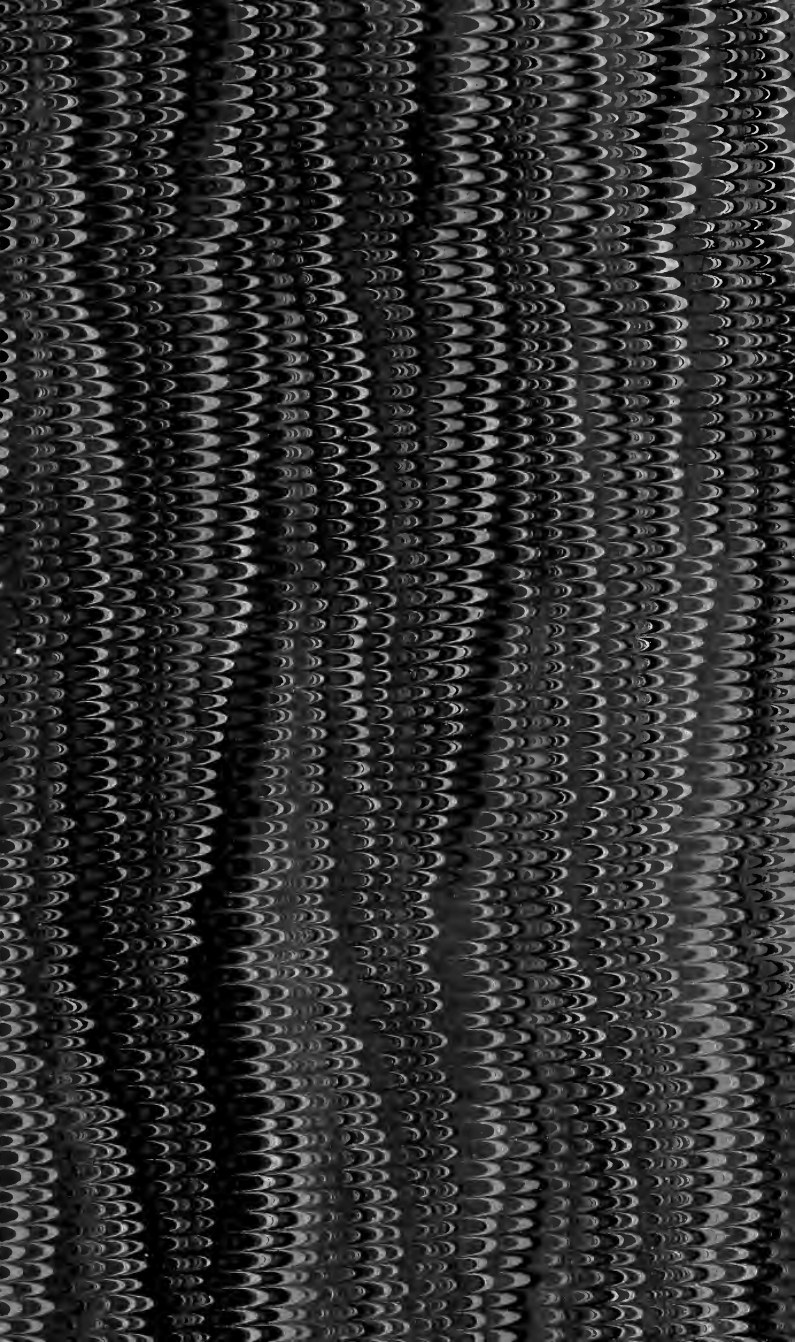
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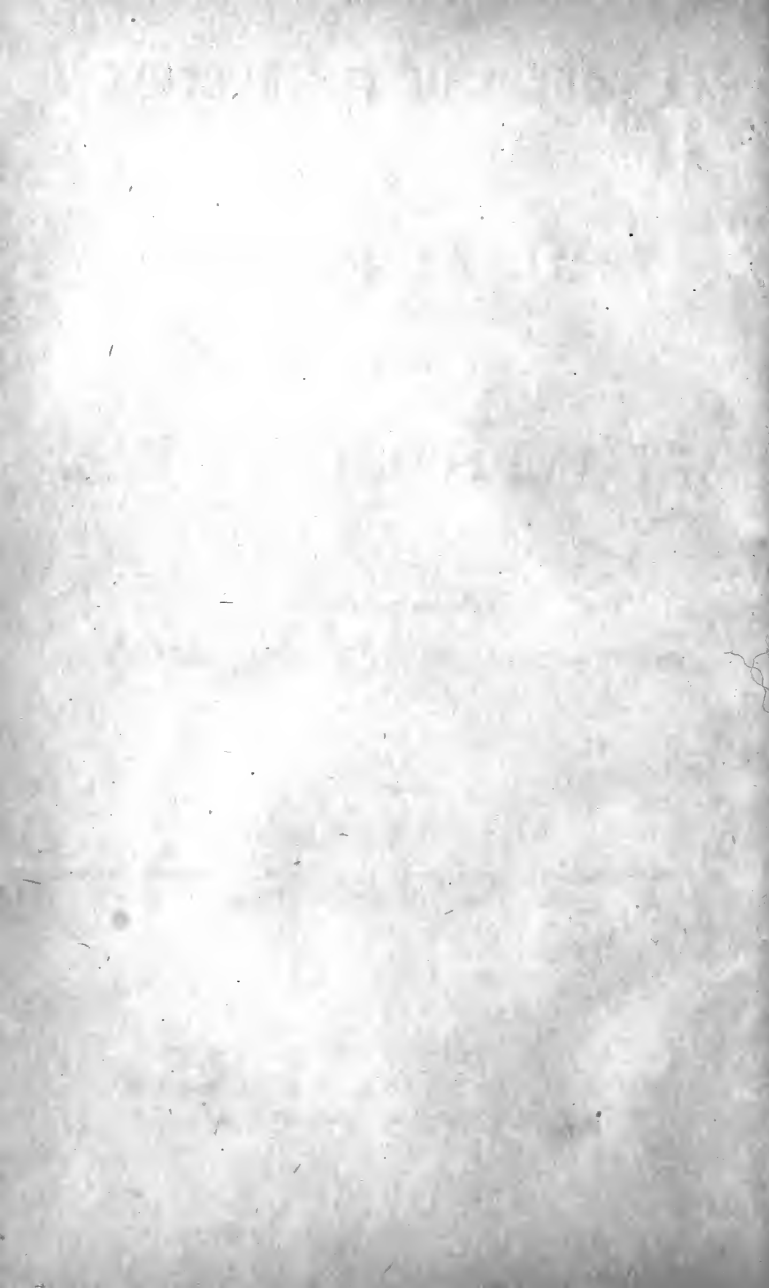












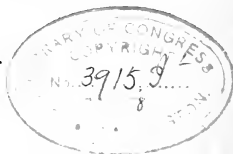


A COURSE OF INSTRUCTION  
IN  
THE ELEMENTS  
OF THE  
ART AND SCIENCE OF WAR.

FOR THE USE OF THE  
CADETS OF THE UNITED STATES MILITARY ACADEMY.

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J. B. WHEELER,  
✓ BY

PROFESSOR OF MILITARY ENGINEERING IN THE UNITED STATES MILITARY ACADEMY.  
AND BREVET COLONEL UNITED STATES ARMY.



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*"Misfortune will certainly fall upon the land where the wealth of the tax-gatherer, or the greedy gambler in stocks, stands in public estimation above the uniform of the brave man who sacrifices his life, health, or fortune to the defence of his country."*—[JOMINI.]

# ART AND SCIENCE

## CHAPTER I

### DEFINITION OF THE ARTS

The first question which presents itself is, what is the meaning of the word Art? It is a word which is used in many different senses, and it is not always clear to which sense it is applied. In the present work, it is used in the sense of a skill or a craft, which is acquired by practice and experience. It is a word which is used to denote a particular branch of knowledge, or a particular mode of action, which is distinguished from other branches of knowledge, or other modes of action, by its own peculiar principles and methods. It is a word which is used to denote a particular branch of knowledge, or a particular mode of action, which is distinguished from other branches of knowledge, or other modes of action, by its own peculiar principles and methods. It is a word which is used to denote a particular branch of knowledge, or a particular mode of action, which is distinguished from other branches of knowledge, or other modes of action, by its own peculiar principles and methods.

# ART AND SCIENCE OF WAR.

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## CHAPTER I.

### DEFINITION OF THE ART OF WAR.

1. **Nations** often become involved with other nations or states in quarrels or disputes which can not be settled or composed by peaceful measures. Military force is then employed and the resulting contest is known as "*war.*"

2. **War** has therefore been defined to be "*a contest between nations, states, or parts of states, carried on by force.*"

Wars are classified in various ways. They are classified from the nature of the military operations employed in their prosecution ; into *offensive* or *defensive* wars : from the end to be attained ; into wars of *conquest*, wars of *independence*, etc. : from the causes producing the war ; into wars of *insurrection*, *religious* wars, etc. : from the general locality in which they are waged ; into *American*, *African*, *European*, etc. Other classifications than these are also used, being based on the nature and object of the war.

The subdivisions and classifications employed are generally of so marked a character that the reader will easily perceive the reasons governing their use by the writer.

3. The classification into *defensive* and *offensive* wars is the only one that will be used in this treatise, since its object is to discuss only the general principles and rules applicable to all wars after they have begun, without regard to the causes which produced them or the end for which they may be waged.

Any military movement, having for its object an attack upon the enemy, is termed an *offensive* operation.

Any military movement, having for its object the awaiting of an attack by the enemy, is termed a *defensive* operation.

A war in which the military operations are offensive is therefore termed an *offensive war*; if the operations are defensive, it is a *defensive war*.

Hence, a war carried on in an enemy's country is generally an offensive war; and a war carried on in one's own country to resist the attacks of a foreign enemy or to repel an invasion, is a defensive one. A war may, however, in a military sense be essentially offensive, while at the same time in a political sense it is defensive. That is, a nation or state may, in order to defend its rights, take the "offensive," while its opponent, who incited the war and who is the real offender, may from policy or interest confine itself to strictly defensive operations.

4. Whether the war be an offensive or a defensive one, the **art** of properly employing and of rightly directing the movements of armies, so as to bring the war to a successful termination, becomes one of the greatest importance. It is this art, and the principles on which it is founded, that are now to be considered.

5. **War** is both a *science* and an *art*. All investigations which have for their object the determination of the great principles which should govern a general in conducting his military operations ; all analyses which are made to show the important and essential features which characterize a campaign or a battle, and comparisons made with other campaigns and battles ; all deductions and formations of rules which are to be used in military operations ; all these belong to the "*Science of War*."

The practical application of these great principles and rules belongs to the "*Art of War*."

6. In the science of war as well as in the other physical sciences, the facts must precede theory ; and although the number of known facts is steadily increasing, the number of general principles upon which the theories of the science are based, is constant, if not decreasing.

These general principles are deduced by a close and critical examination of such methods of waging war as have been adopted by those great generals who are known as eminent in their profession.

7. It is evident then that an intimate connection exists between military history and the science of war.

Napoleon said, "Alexander made eight campaigns ; Hannibal, seventeen, one in Spain, fifteen in Italy, and one in Africa ; Cæsar, thirteen, of which eight were against the Gauls and five against the legions of Pompey ; Gustavus Adolphus, three ; Turenne, eighteen ; Prince Eugène of Savoy, thirteen ; Frederick, eleven, in Bohemia, Silesia, and on the banks of the Elbe. The history of these eighty-four campaigns, written with care, would be a complete

treatise on the art of war. From this source, the principles which ought to be followed, in offensive as well as defensive warfare, could at once be obtained."

To these campaigns, are to be added the battles and campaigns of Napoleon.

Jomini, an eminent writer on military art, says, "Correct theories, founded upon right principles, sustained by actual events of wars, and added to accurate military history, will form a true school of instruction for generals. If these means do not produce great men, they will at least produce generals of sufficient skill to take rank next after the natural masters of the art of war."

The sources of all treatises on the "Art and Science of War" are to be found in the military histories narrating the events and results of the battles and campaigns just enumerated.

### **General Divisions of the Art of War.**

8. The Art of War is divided into several distinct parts or branches. Jomini gives the following,

1. *Statesmanship in relation to war.*
2. *Strategy.*
3. *Grand Tactics.*
4. *Logistics.*
5. *Engineering.*
6. *Minor Tactics.*

As the object of this treatise is to allude only to the principles and rules common to all wars, the first subdivision may be omitted for the present, and the following classification may be used, viz :



1. *Strategy.*
2. *Tactics.*
3. *Engineering.*
4. *Logistics.*

9. These branches of the Science of War may be defined as follows :

**Strategy.**—The science of directing masses of troops with promptitude, precision and clearness, upon those points the possession of which is of great importance in military operations.

**Tactics.**—The art of executing the designs of strategy.

**Engineering.**—The art of disposing troops, and making arrangements of obstacles, by means of which an inferior force may successfully resist the attacks of a superior force ; and also the art of overcoming and removing all obstacles placed in the way by an opposing force.

**Logistics.**—The art of moving and supplying armies.

10. The best tactical combinations may produce no decisive results, if the movements of the army previous to a battle were not strategical ; a fault in tactics may be the cause of the loss of a battle, of a strategical position, or of a strategical line.

Battles have been lost and even entire campaigns have failed, in consequence of neglect in the branch of engineering, or through some fault committed by the engineer. And even when there has been success in these three branches, an army may be powerless to seize an advantage within its grasp, or to follow the enemy after securing a victorious result, from the want of transportation or from a failure in supplies.

These four branches of the Science and Art of War are therefore intimately connected, and a knowledge of them is essential to the staff-officer, as well as to the general officer who directs the movements of the army.

Jomini says that "familiarity with all these branches is not essential in order to be a good infantry, cavalry, or artillery officer ; but for a general or staff officer, this knowledge is indispensable."

## CHAPTER II.

### STRATEGY.

**11. Definitions.**—*Strategy* has been defined to be the science of directing, with promptitude, precision and clearness, masses of troops to gain possession of points of importance in military operations.

The object of strategy is to so direct these masses that upon reaching any designated point, the army shall have a better position than that held by the enemy, or shall have such a position as will force him to change his position, or shall be superior to him in numbers, or shall have some decided advantage over the enemy, in case of a conflict.

12. If two armies, when brought face to face, have kept their lines of communication protected and are both ready to concentrate for action, it is evident no strategical object has been attained by either of them.

If, however, one of the armies has been so directed that it has gained a position which forces its opponent to retire or to fight at a disadvantage, it is evident that one of the objects of strategy has been attained.

13. A movement of an army is therefore said to be "*strategical*," when by its means there are concentrated at a given point troops superior in numbers to those of the enemy; or, at this point, there is gained a position by which the enemy's communications with his base are cut or threat-

ened while those of the army are secure ; or, a position is gained by which the forces of the enemy are separated or are prevented from acting in concert.

14. Strategical operations are directed to attain one or more of these objects ; and the line followed by an army in an operation of this kind, is called a "*strategical line*."

The area of country or territory in any part of which the hostile forces can come into collision, is termed the "*theatre of war*."

There may be employed in a given theatre of war several armies or only one. If there are several armies, but each acting independently of the others, or if there is only one, the particular portion of the territory in which each acts is termed the "*theatre of operations*" for that army.

15. A theatre of operations of an army may be defined to be all the territory it may desire to invade, and all that it may have to defend. Where several armies are employed, acting in concert, the theatre of operations of each army depends upon the movements of the other armies, and the theatres of operations of each army in this case are usually designated as "*zones of operations* ;" although this term is also applied to those three divisions of a theatre of operations lying directly in advance of the centre and flanks of a front of operations.

Whatever is true for a theatre of operations of an army acting alone is equally true for the theatres of operations of several armies acting separately, and is also applicable to the whole theatre of war.

16. To make our statements definite, suppose a single army acting in an independent theatre of operations.

A general with such an army under his command proposing an advance towards the enemy will have three things to consider.

These are as follows,

1. The place from which the army is to start.
2. The point to which the army is to go.
3. The roads or routes by which the army is to move in order to reach this point.

The first, or place of starting, is termed "*the base of operations.*"

The second, the point to be reached, is called the "*objective point,*" or simply "*the objective.*"

The third, the roads or routes used by the army in reaching the objective point, is termed the "*line of operations.*"

The portion of the theatre of operations in front of the successive positions occupied by the army as it advances, is known as the "*front of operations.*"

### **Bases of Operations.**

17. A base of operations is the section or portion of country, adjoining the theatre of operations, in which the supplies and reinforcements for an army may be collected, from which an army moves to take the offensive, and upon which it falls back if obliged to retreat. As it is difficult and perhaps dangerous to collect all the supplies necessary for an army at one point, it is usual to select several points so situated as to provide in the best manner for a proper distribution of the depots of supplies. These points should be safe from any sudden attack of the enemy ; they should therefore

occupy strong positions, well fortified, and should be connected by good communications.

A wide river, not fordable, with both sides fortified, is generally regarded as the best kind of base. A base of this description forms a strong line of defence in case the army has to defend itself, is secure from any sudden attack from the enemy, has good communications with the different points, and can be easily kept supplied.

18. The base of operations for an army invading an enemy's country is in general that part of the frontier separating the army from the theatre of war.

The base of operations for an army defending its own country is generally the capital and the country surrounding it.

Where one of the contestants has control of all the navigable waters separating the two countries, a portion of the enemy's own country in which there is a good harbor, which may be held and kept supplied, is frequently used as a base of operations for the invading army.

This was the case in the war with Mexico in 1847, when General Scott captured Vera Cruz and made use of it and the surrounding country as a base of operations in his invasion of Mexico.

19. The selection of the locality of the base will depend greatly upon the plan of campaign. Assuming that the locality is fixed, a good base must fulfil the conditions already mentioned, viz: the depots of supplies, magazines, etc., must be so located as to be secure from any sudden attack of the enemy; these depots must be so situated that they can be kept supplied and connected by good communications; and

the base must form a good line of defence to be used by the army if required.

20. The advantages of a base depend greatly on its extent and form.

A base of considerable extent possesses advantages greater than those of a base more contracted. The longer it is, the greater will be the number of roads leading from it towards the enemy's positions, thus giving a choice of line of operations ; and a choice of lines of retreat if obliged to fall back.

A contracted base, as that of a single harbor, restricts the army to a single line of operations, and this line becomes more precarious as its length increases. The enemy getting possession of it will succeed in cutting off all supplies and reinforcements, and will embarrass, if not entirely cripple, the invading army.

Hence, an army beginning with a contracted base should extend its base as soon as possible, by occupying, as it advances, other strong points, and strengthening them by fortifications. The depots of supplies should be distributed in the best manner, extending them behind the flanks of the army as widely as may be consistent with their safety.

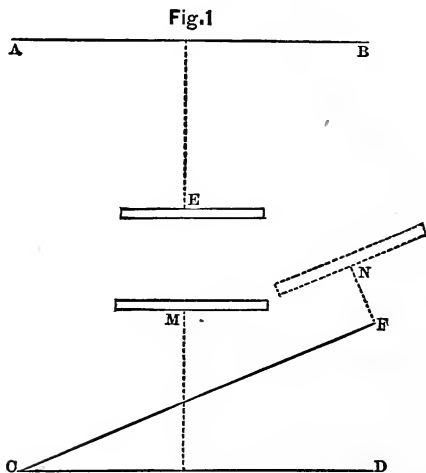
21. The base may have a *straight* direction ; it may be broken, or have an *angular* shape ; or it may have a *curved* direction.

22. *Straight bases.* If the base is straight it may be parallel to the enemy's base, or it may be inclined thereto.

If the base is straight and parallel to that of the enemy, and of the same extent, neither contestant has an advantage over the other. If one is of greater extent, that army with the greater base will have a choice between a greater number

of lines of operations, and will have greater freedom of movement. If the base is oblique to the enemy's front, and is of sufficient extent, it may be possible to turn some of the positions occupied by the enemy and force him to retire, abandoning the ground in his advance.

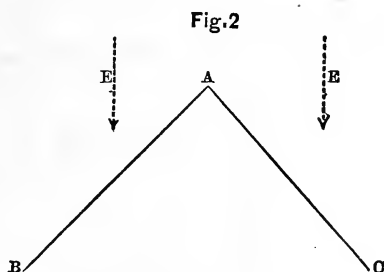
This may be seen by an examination of Figure (1).



If an army, as M, has for its base the line CD, parallel to the enemy's front E, and of extent equal to that of his base, AB, any movement made to get on the flank or rear of E would result in exposing M's own line of communications with its base, CD, and no particular advantage would be gained. If the base was oblique as shown by the line CF, then an army, as M, could place itself with safety in a position, as N, threatening the left flank of the army, E, and its communications with its base, AB.



23. *Angular base.* If the base is angular, the angle may be towards the enemy or away from him. If it is salient, (Fig. 2), it is plain an enemy, EE, moving beyond the salient



A, would have his communications threatened from A, and would also be liable to a flank attack.

A base of this form is weak at the salient. The smaller the angle at A, or the farther this front is advanced beyond B and C, the weaker will the base be. The salient must therefore be strengthened, and made perfectly safe.

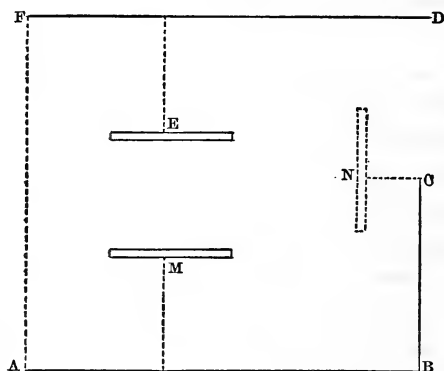
A base of this form is, however, more favorable for an army acting on the defensive than for one acting offensively. For an army acting within the angle, BAC, can move from one part of the line to another, to reinforce any part of the line, more quickly than one on the exterior can.

24. If the base instead of being salient is drawn back behind B and C, that is forms a re-entrant, it will be more favorable for an army acting offensively than for an enemy acting defensively. For an army proceeding from a base, of this form, can threaten or seize the communications of its opponent without exposing its own.

A favorable example of this kind of base is seen in Fig. (3).

Let ABDF represent the field of operations ; and suppose the side AF to be closed by insurmountable obstacles, and the sides AB and BC to be under the control of the army M, which has advanced from the side AB. It is seen that the army M can occupy safely a new position as N, threatening the enemy's

Fig.3



flank and rear, and in case of defeat has a safe line of retreat to C.

Bases of this form are generally termed "*double bases*," and have the advantage of giving two lines of retreat widely apart, either of which may be used.

25. *Curved bases.* Bases may be curved in form, either convex or concave towards the enemy. Curved bases are simply modified forms of angular bases, and possess the advantages of the latter in proportion to the degree of convexity and concavity they may have.

26. **Selection of base.** The direction or the general form of the base, exercises therefore a considerable influence

upon military operations, and this must be duly considered in making a plan of campaign.

The choice of form of base will, as it is seen, be influenced by the kind, offensive or defensive, of the war to be undertaken.

So, also, with the extent of base. Some proportion must exist between the length of base and the length of the line of operations.

In the case of a straight line as a base, military writers have assumed that these lines will be correctly proportioned to each other when the straight lines, drawn from the objective point to the extremities of the base, form with the base itself an equilateral triangle.

The advantages of an extended base have been mentioned. In case of a retreat, the base is to form a line of defence; as a long line of defence is necessarily weak, there must be a limit to the extent of the base.

27. The bases thus far considered have been those established in the beginning of a campaign and from which the first advances are made. These bases are known as "*primary bases*."

28. **Secondary bases.** An army carries with it ammunition only sufficient for one battle, and but a few days' supply of food. These supplies of ammunition and provisions must be brought from the base; and as the army advances, the difficulty of keeping up the supplies increases. An army is then said to be "tied to its base" unless some additional provision be made.

As the necessary supplies can not be obtained in the theatre of operations in sufficient quantities for the daily

needs of an army, depots and magazines must be organized near the army from which these supplies can be procured.

The same precautions which were recommended, for establishing a primary base, should be observed in establishing these second points, which together form what is known as a "*secondary base*."

Napoleon said, "It is necessary for an army marching to the conquest of a country to have, at every five or six days' march, a fortification or an intrenched position upon the line of operations, in order to collect there supplies of provisions and ammunition, to organize its trains, and to make it a centre of operations," etc.

29. Although prudent to establish successive bases of operations fulfilling all the conditions given for primary bases, it does not follow that an army should stop in the middle of a successful advance for such a purpose. It would be sufficient to leave detachments of troops to hold important points, to strengthen these points by fortifications, and to keep open and guard the communications in rear. Under the protection of these detachments depots of supplies could be established, although they might not have the relative position or requirements demanded of such points on a primary base.

### **Lines of Operations.**

30. The roads or routes by which an army moves from its base towards its objective point have been designated by the term "line of operations."

Lines of operations are classified from their number; into *single*, *double*, or *multiple* lines: from their positions with respect to the lines of operations of the enemy; into *interior* or *exterior* lines: and from their position with respect to

each other ; into *convergent* or *divergent* lines : other classifications are sometimes used descriptive of the nature or other quality of the line.

31. *Single line of operations.* An army moving in a given direction with all its parts united, or with those parts so situated that they can be readily joined when required, is said to use a "single line of operations." Sometimes this line is called a *simple* line.

A single line of operations does not mean a *single road*, but embraces all the roads or routes taken by the fractions of the army for the purpose of reaching a common point of concentration ; the condition being imposed, that these roads shall not be so far apart, or have intervening such obstacles, that the different parts of an army will be prevented from uniting at any given time which may be appointed.

32. *Double and multiple lines of operations.* When there are obstacles intervening between the roads or routes passed over by an army, or the roads are so far apart as to prevent the parts of the army from being readily united, the army is then said to employ "double" or "multiple" lines of operations.

33. *Interior lines of operations.* If these lines are within those employed by the enemy, they are known as "interior" lines.

34. *Exterior lines of operations.* If these lines are outside of the lines employed by the enemy, they are called "exterior" lines.

35. *Convergent lines of operations.* If these lines of operations start from points some distance apart, approach

each other, and meet at some point in advance, they are called "convergent." Sometimes the term "concentric" is employed to designate them.

36. *Divergent lines of operations.* These lines are the reverse of convergent lines, as they continue to separate, or the distance between them to widen, as the army advances. The term "eccentric" is also applied to them.

37. *Accidental lines of operations.* Lines of operations are sometimes employed, different from those proposed in the original plan of campaign. To these lines the term "accidental" is applied. It does not follow that their adoption is a matter of accident, as might be inferred from their name. They are frequently the result of a change in the original plan, which probable change was foreseen and provided for.

38. *Temporary lines of operations.* Sometimes an army in making a movement employs a line which deviates from that adopted in the general plan of campaign. As soon as the movement is completed the original lines are resumed. Such line adopted for such movement is termed a "temporary line." The term "*maneuver line*" is also applied to it.

39. **Lines of retreat.** The roads passed over, as the army advances, are ordinarily the roads taken when the army retires or is driven back. In the latter case they are known as "lines of retreat" and are "single," "double," "diverging," etc., according to their number and position.

40. **Lines of communication.** The term "lines of communication" is applied to all the practicable routes and roads connecting the different parts of an army occupying the theatre of war. Therefore, as the army moves from its base, the lines of operations become lines of communication, and

since these "lines of operations" are generally the longest and most important lines of communication, it is to them that the simple term "communications" generally refers.

All the routes used by the trains employed in provisioning an army, form a part of the communications. The most important, safest and most convenient of these routes, all other things being equal, will be the central one, or the one leading from the centre of the army back to the base. This particular route is sometimes designated as the "line of supplies."

**41. Strategical lines.** The lines followed by an army in making a strategical movement are called "strategical lines."

Temporary lines of operations, or maneuver lines, therefore, are strategical lines. Lines of operations are important strategical lines. And in general, lines connecting two or more strategical points, which lines can be used by an army, and which allow of easy communication between these points, are "strategical lines." A base of operations is therefore a strategical line.

**42. Safety of a line of communication.** So vast is the amount of ammunition consumed in a battle by the modern fire-arms, that it is almost impossible, as has been before stated, for an army to carry with it more than enough for a single battle.

If, after a general engagement, it is found that the enemy has possession of the army's communications with its base, it may be simply an impossibility to continue the contest, or it may be necessary to abandon to the enemy a large portion of country which it was desirous to retain. Thus Napoleon, after the second day's battle at Leipsic, had so reduced his

supply of ammunition as to be obliged to withdraw to his depots at Erfurt, losing his line of communication with Torgau.

The roads forming the communications of an army are more or less filled with trains carrying forward supplies of every description, and trains returning filled with sick and wounded. Detachments of men and numbers of stragglers are scattered along the route, many of them going to the rear. All these fall into the hands of the enemy upon his getting possession of the roads.

In addition to the loss of supplies, means of transportation, etc., caused by the seizure of the army's communications, and which are severely felt, there is another consequence to be considered. This is the effect produced by closing the natural line of retreat of the army. Hence, the reasons for insisting upon the great importance of protecting the lines of communications of an army.

43. A long line of communication is more difficult to protect than a short one. Napoleon's Russian campaign illustrates the danger attendant upon a long line of communication. As he advanced on Moscow, two corps of the Russian army moved, one from Finland, the other from the south, to strike his line of communications. Their junction was to be made where this line crossed the Beresina, a branch of the Dnieper. The execution of this plan nearly resulted in the capture of Napoleon, and certainly caused the great disasters of that famous retreat.

### **Objective Points.**

44. The point to be reached or gained by an army in executing a movement, has been termed the "objective point."

There are two classes of objectives, viz.: *natural* and *acci-*



*dental*. The term *geographical* is frequently used to designate the first of these.

45. *A natural objective* may be an important position, strong naturally, or made so by fortifications, the possession of which gives control over a tract of country, and furnishes good points of support or good lines of defence for other military operations. Or, it may be a great business centre, or a capital of the country, the possession of which has the effect of discouraging the enemy and making him willing to sue for peace.

46. *Accidental objectives* are dependent upon the military operations which have for their object the destruction or disintegration of the enemy's forces. These objectives are sometimes called "*objective points of maneuver*."

The position of the enemy determines their location. Thus, if the enemy's forces are greatly scattered, or his front much extended, the central point of his position would be a good objective point, since the possession of it would divide the enemy's forces, and allow his detachments to be attacked separately. Or, if the enemy has his forces well supported, a good objective would be on that flank, the possession of which would allow his communications with his base to be threatened.

It is well to remark that the term "point" used in this connection is not to be considered merely in its geometrical sense, but is used to apply to the *object* which the army desires to attain, whether it be a position, a place, a line, or even a section of country.

47. **Strategical fronts.** The portion of the theatre of war in front of any position occupied by an army as it

advances, is termed the "front of operations." That part which is directly in front of the army, or which can be reached in two or three days, forms simply a "front." When the whole extent lying between the two hostile armies is considered, the term "strategical front" is applied.

48. **Strategical Points.** Every point of the theatre of war, the possession of which is of great importance to an army in its military operations, is a "strategical point." These are points which an army acting on the offensive strives to gain and the army on the defensive strives to retain.

The importance of a strategical point depends sometimes upon its natural or geographical position, and at others upon its position with reference to the enemy's forces.

49. There are, therefore, as in objectives, two classes, viz. : *Natural or Geographical*, and *Accidental*.

These are sometimes designated as *permanent* and *temporary* strategical points.

50. Those strategical points whose possession insures success for a military operation are known as "*decisive* strategical points," or simply "decisive points."

The capital of a country is a natural or geographical strategical point, and is frequently a decisive one.

Any point which is strong naturally, or made so by artificial means, and which commands the roads or routes intersecting the theatre of war, or whose possession gives control of a tract of country, is a "natural strategical point."

A point whose possession will give an advantage over the enemy, causing him to fight at a disadvantage, or retreat, is an "accidental strategical point," since it is frequently de-

pendent upon the positions of the contending forces at a particular time. It is generally a "decisive" point, for its possession insures success for the military operation with which it was connected.

51. Natural strategical points are few in a country which is open and comparatively level. Fortified places and large cities are the most common in this case. The possession of a large city, which contains large supplies and is the centre of trade and commerce, would be of advantage to the invading army, and hence a good strategical point.

In broken, hilly and mountainous countries there will be found many natural strategical points. Such are the points at which several roads or lines of communication meet; at which good positions are found commanding the passes through mountains; or commanding the crossings of streams which are not fordable, etc.

Hence, any position, strong naturally, or made so by fortifications, which commands the junction of any system of roads, railroads, or other communications; or commands a navigable stream or its crossings; or commands the roads leading through passes over mountain ranges; or commands and gives control over a tract of country, rich in population and supplies; any one of these is a natural strategic point, whose possession is of great importance to an army operating in its neighborhood.

A simple redoubt controlling a route may be a decisive strategical point for a particular operation. Thus a redoubt in the Montenotte pass in Bonaparte's campaign in Italy in 1796, frustrated the Austrian movement and enabled Bonaparte to succeed in his operations. Also, in 1800, Fort Bard

in the valley of Aoste, came very near having a decisive action upon the military operations of Napoleon and defeating his plan of campaign.

52. Objective therefore, are or should be "*decisive* strategical points."

## CHAPTER III.

### PLAN OF CAMPAIGN.

53. THE term "*campaign*" is used to designate the time employed by an army in the field to accomplish a given object.

54. Before a war is begun, or any military enterprise is undertaken, the object to be attained must be selected, and all the movements which are to be made by the army for the purpose of getting possession of this object must be fixed in advance as accurately as possible.

These movements are made in accordance with some scheme, to which the term, "*general plan of the war*" is applied. This "*general plan*" comprises the selection of the principal objects to be gained, the general combinations which are to be made for their attainment, and all the necessary preparations and arrangements to carry the combinations into effect.

55. Political considerations and "*military policy*" exercise considerable influence in the selection of the objects to be attained, and affect materially the proposed combinations.

All considerations, not political, and not belonging to diplomacy or strategy, which influence military operations, are classed under the general head of "*military policy.*" As for example, the kind of military system in use by the enemy; the character and ability of the enemy's generals; the char-

acter of the executive; the possible influence of some particular cabinet officer, or of cabinet councils; the character of the masses of the people living in the enemy's country; the degree of attachment felt by these masses for their form of government; the financial resources of the enemy, etc., would exercise an influence upon the plans to be formed, and would frequently decide the kind of war to be waged.

56. The "general plan of the war" is a project conceived and determined upon by a government after consultation with its military authorities. This plan may require the use of only a single army and a single campaign; or it may require many armies and many campaigns for its fulfilment.

57. In either case each army will require a plan of operations for each campaign. This plan of operations, designated as "*the plan of campaign*," will have for its aim some object whose possession forms a part of the "general plan."

A "plan of campaign" comprises the selection of an objective; the selection of routes over which the army is to march; the determination of the movements by which the objective is to be reached; and all the arrangements to be made for providing the army with the necessary supplies during the time it is employed.

58. The formation of the "general plan" is the act of the government; the formation of "the plan of campaign" is, or should be, the act of the general entrusted with its execution.

59. Assuming the plan of campaign to be intended for an army engaged in an offensive war—that is, for an army which is to move forward into the enemy's country—the attention of the student is particularly directed to four essential things, which are as follows:

1. The selection of an objective.
2. The selection of a "theatre of operations."
3. The selection of a base.
4. The selection of "lines of operations."

**60. I. Objective.** The first thing to be considered in forming a plan of campaign is the selection of an objective. This selection is made by the general who is to command the army during the campaign, unless it has already been chosen by some higher authority.

Sometimes there is no choice, the objective being determined by the nature of things already existing. Thus in the case of a war waged for the purpose of quelling an insurrection or crushing a rebellion, the objective would be the armed forces wherever they might be. In case the war was waged for the purpose of adding to a country's territory, the objective would be the coveted portion ; and the plan would be to march into this part, drive out or crush all armed resistance, occupy and hold the disputed territory.

The Silesian wars of Frederick, waged by him to obtain possession of Silesia, are examples of the latter class.

The duration of such wars would depend upon the abilities of the contestants to carry on the struggle.

In the case of a war waged for a less definite purpose than either of those named, such as where a nation has gone to war to redress some wrong or to avenge an insult, the object of the general plan will be to show a superiority of strength, and the objective of a campaign will be the acquisition of some material guarantee as an evidence of this strength.

This material guarantee may be an important sea-port ;

an important centre of trade ; the capital of the country ; a fortified place, etc.

The capital is always an important point to seize, as the occupation of the seat of government by a hostile power is so ruinous in its effect upon the nation, that almost any sacrifice made by the state is regarded as less hurtful than the presence of the enemy in its capital.

The seizure of the city of Mexico by General Scott, in 1847, is an example. And at a later date, the capture of Paris by the Germans, in 1871. In both of these cases the possession of the capital by the invading forces formed the objective of the general plan, and also the objective of particular campaigns ; and this objective having been acquired, the war, in each instance, was virtually at an end.

61. The actual possession of the capital is not, however, always the end of the war, and is not always sufficient to make the enemy sue for peace.

So long as the enemy can raise armies and use them effectively, the possession of the capital forms only a part of the general plan. The invader, in addition to seizing the capital, must show such a degree of superior skill and strength that the defenders, in order to save their armies from disintegration and ruin, will be willing to submit to the terms proposed by the victorious foe.

62. The objective selected for attainment in a campaign may be and most generally is *natural*, although it may be *accidental*. The kind of war and the general circumstances attending each case will influence the general in making his selection. He will endeavor, however, to select an objective which shall be a "*decisive*" one.



63. The objective selected will oftentimes be attained only by gaining positions and strategical points, which form what are generally known as "secondary objectives." The possession of these latter marks the ending and beginning of successive epochs or periods of a campaign. The general principles, directing the operations of an army in attaining its principal objective, apply equally to all the movements which have for their object the possession of any of these secondary objectives.

64. **II. Theatre of operations.** Usually, but not always, the selection of the objective has the effect of fixing the selection of the theatre of operations. Even where there is but a single object to be attained, the theatre of war will contain portions of country which are more or less favorable for the operations of an army, or in which the operations will have a more or less decisive influence upon the results of the campaign.

65. The selection on military grounds alone will be based upon the following considerations, viz. :

1. The convenience and the security of the base.
2. The nearness of the base to the objective.
3. The number and the kind of communications leading from the base to the objective.
4. The topographical features of the country through which the army must move to reach the objective.

The effective use of the different arms of the military service is greatly dependent upon the natural features of the ground upon which the troops are to be employed.

A country which is open is more suitable for the move-

ments of a cavalry force than one which is wooded, or intersected by ravines or other obstructions.

A firm soil, good positions and good roads, are necessary for an effective use of artillery.

Any kind of country can be used by infantry. The choice between an open country or an obstructed one for infantry will depend upon circumstances. If the army consists principally of infantry and the enemy is superior in cavalry, a hilly or wooded region is to be preferred ; but if the army is superior to the enemy in cavalry and artillery, an open country would be selected, etc.

The topographical features of the country through which the army is to move, will therefore, have a great influence in determining the selection of a theatre of operations whenever there is a choice between several theatres.

66. III. **Base of operations.** The selection of the part of the country from which an army is to draw its supplies and to receive its reinforcements, and the selection of the theatre of operations are dependent upon each other. The selection of the theatre of operations usually fixes the base ; and the converse.

The general in selecting his base of operations will duly consider the relative effects of form and extent which have already been mentioned.

67. IV. **Lines of operations.** The theatre of operations affords generally a choice of lines of operations, as there are frequently several routes which can be used by the army in moving forward from its base towards the objective.

As for example, in the campaigns of the late war with the Confederacy, advances were made upon Richmond, from the line of the Potomac River and Chesapeake Bay, along different lines of operations at different times. One was by the way of Alexandria, Centreville, Warrenton, and Culpepper. Another was by the way of Acquia Creek and Fredericksburg. Another was by the York River, White House, and the Chickahominy. Another was by the James River and Harrison's Landing. And another was by the James River, City Point and Petersburg.

All these were used on different occasions and were selected at the time of using for reasons which were satisfactory to those planning the campaign.

68. It has been stated that the causes influencing the selection of the theatre of operations and the base of operations are mutually dependent on each other. So is the selection of the lines of operations influenced by the causes governing the selection of the base and theatre. The three are mutually dependent, and are to be considered together.

The selection of the lines of operations is especially dependent upon the "number and kind of communications leading to the objective."

The heavily loaded wagons following an army soon cut up and render the ordinary country roads almost impassable, and make it an extremely difficult thing to supply an army unless the distance between the depots of supplies and the troops is very short.

Good roads are therefore essential, and they must be practicable for all arms of service and their trains. Railroads which are in good repair, and are supplied with sufficient

rolling stock, and streams which are navigable, form excellent lines of communication and are to be used in preference to ordinary roads when the distances are great. Turnpikes or macadamized roads are next in value to railroads.

69. Good roads are essential not only for the supply of an army, but for the prompt execution of strategical movements and tactical manœuvres. Col. Hamley says that "the march of the troops and artillery becomes, on bad roads, so slow and uncertain that all the calculations, on which a general bases a combined operation, are liable to be falsified; and the rapidity necessary for a movement intended to surprise or foil an adversary is lost, so that the design is foreseen and frustrated by the enemy."

He gives several examples of the rates of travel on good and bad roads, and the ill results flowing from using the latter.

One of these examples given by him is that of Napoleon following Wellington, and Grouchy following Blucher, after the battle of Ligny and just before that of Waterloo. Both Napoleon and Grouchy left the field of Ligny on the afternoon of the 17th of June, 1815. Napoleon, with twenty-five thousand men marching on the paved high-roads, reached Waterloo, a distance of seventeen miles from Ligny, the same night.

Grouchy, with thirty thousand men marching along the country roads, had great difficulty in reaching, by ten o'clock that night, Gembloux which was distant only five miles from Ligny.

This example illustrates the difference in the rate of march of an army over good and poor roads.

The recent war of the United States with the Southern Confederacy presents many examples of operations paralyzed, and plans defeated, in consequence of the miserable state of the roads over which the armies had to march.

70. The selection of the objective, the theatre, base, and lines of operations, having been made, the general can now, complete his plan of campaign.

It is supposed that he is to command an army that is well organized, in good discipline, properly supplied, and not inferior in numbers to those opposed to him.

To make his plan complete, he must know the probable resistance he will meet in striving to reach his objective. This resistance, so far as the enemy is concerned, may be approximately estimated, if he can ascertain the probable numbers and kinds of troops which the enemy will bring against him, the degree of discipline existing among them, and the character of the general who is to command them.

The knowledge of these three things will materially affect and in many cases materially modify his strategical combinations.

A movement, which may be made with impunity in the presence of undisciplined troops, would be a very rash one in the presence of good troops. A faulty movement made in safety in the presence of troops commanded by a slow, hesitating and exceedingly cautious general, would result in disaster if made in their presence when commanded by a quick and able general.

These things fully considered, the supply department well organized, the depots and magazines established, the proposed movements well considered, the plan of campaign is com-

plete and the operations are begun. The thing to be observed is that every thing connected with the proposed movements should be considered and arranged in advance as far as practicable, and as far as human foresight will admit; and nothing, or as little as possible, should be left to chance.

71. Yet, notwithstanding the arrangements made and plans proposed, there are an infinite number of circumstances occurring constantly, which tend to, and do, modify the plan conceived by the general. The most important of these are the topographical features of the country, the influence of climate, the kinds of troops opposing the movements, and the genius of the general in command of them.

A knowledge of the solution of previous military problems, and a knowledge of military geography, are both essential to any one who desires to make a plan of campaign which should carry with it success.

### **Example illustrative of a selection of theatre and line of operations in forming a plan of campaign.**

**The Campaign of Bonaparte in Italy, in 1800,** ending with the battle of Marengo, may be taken as an example in which a choice was made in selecting the theatre and lines of operations for a campaign.

In 1800, Austria and France were at war. Austria had two large armies actively employed in hostilities; one numbered about one hundred and fifty thousand men, under the command of the Austrian General Kray, and the other, about one hundred and twenty thousand men under General Mélas. The army under Kray was posted with its

left near Constance in Switzerland, its right in the defiles of the Black Forest near Strasburg, and its centre at Donan-Eschingen. This latter place is about twenty-five miles north of Schaffhausen and is the junction of the main roads leading from the Rhine into the valley of the upper Danube.

General Kray holding this position, could observe all the roads crossing the Rhine upon which the French might be expected to move in case of an attempted invasion of Austria. Making this his principal object, Kray acted on the defensive.

The Austrian army under Mélas was in Northern Italy, about to take the offensive, with the object of gaining possession of Genoa and Nice, then in the hands of the French ; and then crossing the river Var, to march upon Toulon.

It is seen that these two armies were separated by Switzerland and were not in supporting distance of each other. Nevertheless, communication with each other through the Tyrol was in case of necessity, possible, after a short delay.

France had opposed to these armies, troops in Holland, along the lower Rhine, in Switzerland, and in Italy.

This was the condition of things in March, 1800, a short time after Bonaparte's accession to the position of First Consul. He, Bonaparte, having failed in his negotiations for peace, determined to act offensively against both of these armies.

He consolidated the armies in Switzerland and on the Rhine into one, to be known as the "army of the Rhine," increased its numbers to one hundred and thirty thousand men, and placed it under the command of General Moreau, with instructions to attack Kray.

He sent Massena to Italy to take command of all the

French troops in that country, with instructions to hold Genoa to the last extremity. It is well to remark that no reinforcements were sent to this French army in Italy, and that this army was in need of supplies of every description. He, Bonaparte, then organized a third army which was to be known as the "army of the reserve," with which he proposed to act against the Austrians, as soon as the proper time for action had arrived. The campaign of this "army of the reserve" is the example taken to illustrate the subject under consideration.

*Bonaparte's Plan.* He selected Northern Italy as the theatre of operations for "the army of the reserve," and determined that as soon as he had heard of Moreau having defeated Kray, or having driven him back upon Ulm and Ratisbon, that he would march the army under his command into Italy, place it between the army of Mélas and its base, and thus having possession of Mélas' communications, force the Austrians to raise the siege of Genoa which they had begun, and force them to fight a battle to regain these communications.

*Position of the Austrian armies.* In the beginning of May, 1800, Kray's army was to all practicable purposes in the position already described; but had Moreau directly in his front, threatening to turn the right flank of his position.

The army of Mélas had moved forward in pursuit of its objects and, at this time, had its right, south of the Apennines, threatening a crossing of the Var, and its left besieging Genoa. It also guarded all the passes through which the principal roads lead from France to Italy across the Apennines. The front of the army of Mélas may be said to have



extended along the whole of the Italian frontier of France, its left resting on Genoa.

It will be seen then that all the lines of communication and retreat for the army under Mélas, leading to Mantua and Verona, pass through the space lying between Milan and Piacenza.

If Bonaparte could place his army in this space, while the Austrians were still occupying the position just described, he would be able to cut their communications, and force them to concentrate against him. In doing so, the Austrians would be forced to raise the siege of Genoa, and to abandon their attempted invasion of France by crossing the river Var.

Northern Italy having been selected as the theatre of operations, Bonaparte now selects this country between Milan and Piacenza as the objective of the campaign in this theatre.

The next, is to select the line of operations. The map shows that Northern Italy is divided by the Apennines and the river Po, into three unequal portions, through all of which, roads lead from the French frontier to the country between Milan and Piacenza. The narrowest one of these three portions is that lying between the Mediterranean Sea and the Apennines, which from its width and mountainous character was peculiarly fitted for the operations of a force composed principally of infantry, inferior to the enemy in artillery and cavalry, and inferior in numbers.

As Bonaparte's army was inferior to the Austrians in numbers, and inferior also in artillery and cavalry, it would seem that this portion would be the one he would select by which to move to the relief of Genoa.

His objections to this selection were, that supposing he was successful in pushing the Austrians back after he had crossed the river Var, they, as they retired from position to position, would be constantly reinforced, and could at the same time keep up the siege of Genoa. And finally, if defeated before Genoa, they could retreat and find shelter under the fortifications on the Mincio and Adige. He would also fail, by this movement, to place his army in the rear of the Austrian army, while they were occupying the position just described. This portion was therefore rejected as not suitable.

The middle portion lying between the Apennines and the river Po, possessed good roads, but also possessed the strong fortifications of Coni, Turin and Alexandria, all in the hands, or under the control, of the Austrians.

His objections to this portion were, that supposing he had crossed the Apennines and advanced against the Austrian forces, the fortified places would enable the Austrians to hold him in check long enough to allow time for the Austrian army to concentrate its scattered forces. Approaching as he would the Austrian centre, the concentration would be more easily effected, and any point more easily reinforced, than if he moved against either of the flanks of their position. The Austrians having possession of the passes of the Apennines, could also delay the French advance upon Genoa and could still prosecute the siege. This portion was therefore decided as not suitable for the execution of his plan.

The third portion lies between the river Po and the Alps. The narrow passes of the Alps, through which the rugged, difficult, and bad roads were carried, the deep snows on the mountains, etc., all seemed to make imprac-

ticable an approach of an army in that direction from France. For this reason, there were but few fortifications and but few troops in this portion. If Bonaparte could get his army over the Alps without Mélas knowing of the movement, there would be no hinderance to his marching directly to the space he proposed to occupy, and to seize the communications of Mélas with his base on the Mincio, thus carrying out that part of his plan of operations. Moreover, if Moreau was successful in pushing back Kray to Ulm, reinforcements from Moreau's army could be sent across Switzerland and used to strengthen the Army of the Reserve, before Kray could know of it.

The Austrians having no fears of an army descending into Italy by crossing the Alps, had guarded but weakly the roads leading from France into this portion of Italy, trusting to the natural difficulties of the roads as affording sufficient protection.

Bonaparte, disregarding these difficulties, determined, that as soon as he heard of Moreau's success, he would cross the Alps, place his army in this third portion of Italy, and proceed to execute the plan already mentioned.

On the 11th of May, Kray's army had been forced back upon Ulm, and on the 13th Bonaparte put his army in motion.

He crossed the main body of his army by the Great St. Bernard Pass. The reinforcements from Moreau crossed the Alps by the St. Gothard Pass.

A knowledge of the difficulties of this march, of the means adopted to overcome these obstacles, of the serious obstruction offered by the little fort at Bard, guarding the

valley of the Aosta, etc., is essential to a complete understanding of this campaign, but it is not necessary to have this knowledge so far as the subject now under consideration is concerned.

The crossing of the Alps was effected, and in thirteen days from the time of starting, Bonaparte and his army were in northern Italy.

Guarding with strong detachments the crossings of the Ticino, Bonaparte marched his army to the space between Milan and Piacenza and seized the roads leading from the Austrian front to Verona and to Mantua.

He was too late to relieve Genoa, Massena having been obliged to surrender, but the delay of the Austrians before Genoa, caused by Massena's obstinate defence, gave Bonaparte time to place his army in the rear of the Austrians.

The Austrian army was forced to fight in order to regain its communications. The battle of Marengo, which was the result, was a victory for the French, and was followed by the surrender of Genoa, and the evacuation of Italy by the Austrians.

Other examples of a choice made in the selection of theatres and lines of operations are to be met with, when reading the history of campaigns made by famous generals.

## CHAPTER IV.

### COMPOSITION OF AN ARMY.

72. THE term **army** is applied to a collection of armed men, arranged in organizations and paid by a government. The term is restricted in its use to those armed forces whose sphere of action is on land.

The composition of an army is fixed by the government and usually differs in time of war, from what it is in time of peace.

73. An army should, however, in time of peace, have its parts so composed that if the necessity arises it could, in a short time, be readily placed on a war footing; or, as it is frequently expressed, "*mobilized*."

An army, thus mobilized, should be capable of executing the tasks that are to be imposed upon it. It must be so organized that the whole must obey a single will; the will of a commander who directs its movements and causes the whole to act for the attainment of a common purpose.

The army must be so constituted as to bind together the general who commands and the common soldier who executes, if the whole is to act as a unit and in accordance with the wishes of the commander.

74. **Its organization** may be said to be begun by grouping those combatants who have the same mode of action. These groups are known as "*arms of service*."

An arm of service may be defined to be "a union of combatants having the same mode of action."

75. There are four of these arms in modern armies, viz.: **Infantry, Cavalry, Artillery, and Engineers.**

These four arms form the principal part of a mobilized army, and as they, or their representatives, are always formed into a line of battle to resist the attack of an enemy, or to make an attack, they are generally known as the "line of the army" or "troops of the line," to distinguish them from other bodies of men who form parts of an army.

These *arms* are sub-divided into fractions, for the purpose of instruction and of supply. The unit for instruction and the unit for supply may be the same or different. The unit of supply, as a general rule, is constant, and is also usually the unit of instruction in discipline. The unit of instruction in tactics will depend upon circumstances, and upon the kind of movements which the commander desires to make.

76. The common unit for the four arms, for supplying the men's wants and for instruction in discipline, is the "*company*." This unit receives, at other times, other names, depending upon circumstances. For instance, a *battery* of artillery is the same as company; the term *squadron* of cavalry frequently means a company, etc.

A **company** consists of a given number of men commanded by a commissioned officer who has the rank of captain.

Two, sometimes three and even more, commissioned officers of a grade below that of captain are appointed to assist the captain in the discharge of his duties. These officers have the grade of lieutenant. Their number and the number of men forming a company are fixed by law.

A certain number are selected from the men, and appointed non-commissioned officers with the rank of sergeant or of corporal. These non-commissioned officers are used to instruct the men in their military duties and in discipline.

77. The number of men and officers forming a company is usually greater in time of war than in time of peace. Experience has fixed upon a minimum of one captain, two lieutenants, four sergeants, four corporals and sixty-four private soldiers for the proper number to form an efficient company of infantry in time of peace.

A company of this size is divided into two equal parts called *platoons*, each of which should be under the especial charge of a lieutenant.

The whole company should be divided into four *squads* of equal numbers, and each squad placed under the charge of a non-commissioned officer, who should be held responsible for the cleanliness of the men of his squad, not only as to their persons, clothing and arms, but also as to their tents or quarters.

It will be easy with a company thus organized to instruct the soldier in "minor tactics" as far as the "school of the company;" to discipline him and teach him strict obedience to orders from all superior authority, and to supply his necessary wants.

78. By the addition of fifty men to this organization the company will have sufficient strength for active field service. With this number of men added to the company, the captain will then have as many under his command as one man, on foot, can attend to while executing the movements demanded by modern tactics. A greater number might be added, form-

ing larger companies, but such large companies would necessitate the mounting of the captain on a horse so as to enable him to execute properly his duties. Larger companies are not expedient, unless the captain is mounted; their size can be excused only on account of deficiency of numbers of good officers, or on the score of economy.

The *company*, with its size based on the theory that it must not be larger than one man on foot can thoroughly command in person, is the unit of organization.

79. Two or three or more companies form a **battalion**. Four, and at the outside, five companies placed in line form, in these times, so extended a line that a single person in immediate and personal command of them will find difficulty in making himself heard and understood by the men throughout the entire line. For this reason the battalion should not, as a rule, contain more than four companies.

The battalion is the *tactical* unit, both for instruction in tactics and in the execution of its movements. The battalion is sometimes made a unit of administration, and forms a complete organization under the command of a commissioned officer of the grade of major or lieutenant-colonel.

80. The more usual rule is to increase the number of companies so as to have enough to form at least two battalions, and with these companies to form the organization known as a **regiment**. The regiment is always an administrative unit and is commanded by a commissioned officer who has the grade of *colonel*. The colonel is charged with the proper administration of the supplies for the regiment, and with preserving good order and promoting military discipline. He takes every opportunity to instruct both the officers and men



in the principles and details of all movements that ought, in any case, to be made by a battalion.

He sees that the company officers do their duty, that the men are satisfied, and that the regiment is in an efficient state.

Upon the organization of a regiment, the company officers are assigned to companies, and each company is designated by a letter of the alphabet. Upon the recommendation of the captains, the colonel appoints the non-commissioned officers of the companies. He appoints an adjutant from the lieutenants of the regiment, and a non-commissioned staff from the enlisted men to assist him in his duties. He selects from the lieutenants, a quarter-master, who receives his appointment from higher authority.

81. The elements of organization for the other three arms of service are practically the same, being that of a company or similar body of men under the command of a captain, and these units grouped together into a battalion or regimental organization for administrative purposes.

The number of men in a company is different for the different arms, a larger number being required for a company of engineers than for a company of infantry, etc. The number for each arm should be fixed by practical experience, and should be sufficient to allow of thorough instruction in all the duties which the men may have to perform in time of war.

82. This sub-division into companies and into regiments is most essential for instruction in discipline. Discipline is an indispensable condition for the existence of a good army. It imparts *cohesion* and *flexibility* to the armed mass. Without discipline an army is only an armed mob over which a

commander would have no control, and upon which he could not rely in the execution of his plans.

The discipline of an army greatly depends upon the captains and upon the colonels. If they are efficient, the companies and regiments become real units, and the army, under the command of an experienced general, obeys a single will.

83. When the army is to be mobilized the regiments are brought together and organized into **brigades** and **divisions**.

Two or more regiments form a brigade; two or more brigades form a division.

A general officer of the grade of *Brigadier-general* is assigned to the command of a brigade, and one of the grade of *Major-general* to the command of a division.

These divisions and brigades may be composed entirely of one arm, or they may be composed of troops belonging to all four of the arms.

84. The *division* is the unit of organization and administration of a mobilized army, and is also the *tactical* unit of the general in command.

When the army is very large, three or four divisions are joined together and form an **army corps**. The officer, commanding an army corps, should be of a higher grade than he who commands a division. This grade, in the U. S. army, would be that of *Lieutenant-general*.

An army corps is most generally composed of all arms of service, and is, to all intents and purposes, an army complete in itself.

Two or more army corps, or armies, would be under the command of the *general*, or of a "general-in-chief."

85. It is to be observed that the functions of general offi-

cers are to command armies, or fractions of an army greater than a regiment, when mobilized. In time of peace, when the regiments are not formed into brigades or divisions, but are distributed over districts of country, the function of the general is to command the troops in these districts, which are then designated by the terms "military departments," or "geographical military divisions."

86. A general in command of an army, or of one of these districts, cannot attend in person to all the duties which such a command imposes. He must therefore have persons to assist him. These assistants form the "*staff*" of the general. Their duties are to transmit the orders of the general, either verbally or in writing, to those for whom they are intended ; to make condensed reports of the numbers, of the positions, and state of the different parts of the army ; to make inspections of the troops, their quarters, etc. ; to supply the troops with shelter, fuel, etc. ; to supply them with arms and ammunition, clothing, food, etc. ; to provide them with medical and surgical attendance, hospital comforts, and to care for their health ; to supervise the legal proceedings arising from infractions of military law and discipline, etc. ; to pay them their wages, etc.

87. This great variety of duties makes it necessary to employ a large number of assistants, and to divide the labors among them.

Hence, there has arisen an organization, forming an essential part of every army, known as the **General Staff**, and divided into corps and departments to which are assigned special duties.

In some cases, the term "general staff" is limited to

include only those officers who are used by the general to communicate his orders, and to inform him of the general and particular conditions of the troops; and the term "staff department" or "supply department" is used to include those officers whose duties are confined to distinct branches of service having for their object the supply of troops.

88. When an army is mobilized, or when a general is placed in command of troops occupying a given district of country, commissioned officers belonging to these corps and departments are ordered to report to the general in command. He assigns these officers to the head-quarters of the army or district, or to divisions, or brigades, as he may think fit, unless this distribution has already been regulated by the War Department.

The senior in rank of each corps or department is usually assigned to duty at the commanding general's head-quarters.

If the army is one of any great size, the general ordinarily attaches to his head-quarters a representative of the three arms, of artillery, cavalry and engineers, giving them the position of staff-officers with the name of "chief of artillery," "chief of cavalry," etc. They are required to keep the general informed of the state of supplies, and whatever concerns their particular arm, in a similar manner to that required of the other officers of the staff.

The general also appoints from the subordinate officers belonging to his command, a certain number of *aids-de-camp*. These officers are *ex-officio*, adjutant-generals, and receive orders only from the general himself. They are confidential officers, who are supposed to be used only in delicate and difficult duties where they may in a degree represent

the general. Hence, they are entrusted to deliver verbal orders which cannot be entrusted with propriety to enlisted men or to the ordinary means of communication.

It is supposed that their knowledge is sufficiently comprehensive to enable them to understand the object and purpose of the general's orders, and to modify them in an emergency or to return in time to the general for new instructions.

**89. Proportion of Arms of Service.** The mass of a modern army is composed of infantry. The amount of cavalry will depend upon the topographical features of the country, being in some cases as much as one-fourth of the infantry, and in others as little as one-tenth.

The amount of light artillery depends upon the character of the country. There should be at least two guns to every thousand men.

The quantity of heavy artillery, or number of siege-batteries, which enter the composition of an army, will depend to a great extent upon the plan of campaign and the probable uses for which they may be intended. The circumstances of the case in each campaign will therefore decide as to the proportion to be employed. The number of engineer troops will depend both on the nature of the country and on the probable amount of work which will be required from this class of troops. Each division should contain at least one company of engineer troops. It is usual, if there be none, to detail one or more companies of infantry to act as engineer soldiers; they are designated as "pioneers."

These engineer troops, or troops acting in that capacity, marching in the advance, make the roads practicable for the command by repairing them, removing obstructions, etc.

At the crossings of streams, where bridges are to be made, or where existing bridges are to be repaired to an extent requiring more knowledge of bridge construction than that usually possessed by the pioneer, another detachment of troops belonging to the engineer arm is brought forward to do the work. These troops are known as *pontoniers*, and have special charge of bridge construction for the army. They may be divided into two parts: one, to have charge of construction of temporary bridges, especially floating and trestle bridges, and construction of ferries; the other, to have charge of repairs of bridges which have been broken or injured by the enemy, and where quick repair is of importance to the army's movements.

These troops charged with bridge construction usually form a part of the reserve and are only attached to a division under peculiar circumstances. There should be also in the reserve, several companies of sappers and miners; their number, like the heavy artillery, being dependent upon the nature of the campaign.

90. The army, as a machine, is now ready to be used by the general. The next step is to keep it in a condition so that it can be used; in other words, to *preserve* the fighting condition of the army. The discipline and drill have been cared for, and with the organization just sketched out, the general can move the whole mass as a unit in accordance with his will.

91. How the army shall be kept in this condition, is the next question.

The army can be kept ready for use only by supplying all the actual and necessary wants of the soldier, and by keep-

ing him in comfort and good health. To do this, there must be ammunition, food, clothing, shelter, medicines, surgical attendance, hospital comforts, etc., provided for his use. Also a good system of recruiting must be adopted, by means of which the natural losses due to sickness and death may be made good.

92. The supplies furnished to the soldier being so varied in their nature, it is easy to see how natural has been the formation of separate departments for these special purposes.

Thus, in the United States army, the Department of Ordnance provides the supplies of ammunition; the Subsistence Department supplies food; the Quartermaster's Department provides clothing, fuel, quarters, tents, forage, etc.; the Medical Department provides surgical attendance, medicines, etc.

The officers, in charge of these departments of a mobilized army, should receive their orders direct from the commanding general, and be directly responsible to him for the efficiency of their departments.

93. The transportation of the munitions, equipments, provisions, hospital supplies, tents, engineering tools, bridge equipage and boats, baggage, cooking utensils, etc., necessary for the use of an army moving against an enemy, requires the use of large numbers of wagons and a great number of draught-animals. These accompaniments to the army received from the Romans the name of *impedimenta*, for the reason that they hindered the movements of the army.

In recent wars, by reason of the immense number of men employed, and in consequence of the bad roads along which the wagons moved, the difficulties of supplying the troops

promptly and in abundance, were greatly increased ; and the wagon trains were in truth impedimenta.

94. These supply departments form important parts of the composition of a modern army, and the method of executing the duties assigned them constitutes an important branch of the "science and art of war."

95. Nothing has been said, so far, as to the means of raising the requisite numbers of men, with which and from which the army is to be formed. The men required for use in an army in time of peace are supplied in different ways in different countries. The two principal methods are voluntary enlistment, and conscription. Voluntary enlistment explains itself. Conscription is where the man is selected by lot from a list of all persons liable for military service in a given locality.

The former is the method adopted by the United States Government.

The details of this method of procuring men for the army are entrusted to "the Recruiting Service," conducted by the Adjutant-General of the Army under the direction of the War Department. Recruits may be enlisted into special arms of service, into special organizations, or into the general service ; in the latter case, they are afterwards assigned to such arm and organization as the head of the recruiting service may direct.

The recruits received at a "rendezvous" are sent as soon as practicable to the "recruiting dépôt" where they are kept until sufficient numbers are gathered together for assignment. They are then assigned to an arm and to a regiment, and upon reaching the regiment are distributed among the com-



panies under the orders of the commanding officers of the regiment.

96. **Military Forces of the United States.** The military forces of the United States consist, at the present time, of the *Regular Army* of the United States, and the *Militia* of the different States.

97. *Regular Army.* The regular army of the United States consists of twenty-five regiments of Infantry, ten regiments of Cavalry, five regiments of Artillery and one battalion of engineer soldiers ; the total number of enlisted men not to exceed 25,000.

It is also provided with a corps of Adjutant Generals ; of Inspector Generals ; of Quarter-masters ; of Subsistence ; of Engineers ; of Ordnance ; a Medical Corps ; a corps of Paymasters ; a chief Signal Officer ; a Bureau of Military Justice ; a number of chaplains ; a force of Indian scouts ; the officers on the retired list ; and the professors and cadets of the United States Military Academy.

98. In command of these, there are eleven general officers, viz. : one General, one Lieutenant-General, three Major-Generals and six Brigadier-Generals, with the proviso that the offices of General and of Lieutenant-General shall cease when a vacancy occurs in either of them.

99. The student is referred to the United States Army Register for a tabulated statement of the organization of the Regular Army of the United States, and for a table showing the Organization of Regiments and Companies. It is unnecessary to insert these tables in this book, for at present they may be simply regarded as variable quantities, possessing a given value only for a limited time.

Penuriousness and over-scrupulousness urged forward by local interests or party spirit seem to be the reasons controlling all plans suggested for the improvement of the present organization, rather than a desire to watch over and preserve such an army as will be of service to the country in the future.

Therefore, any organization authorized by law and experience existing at the time of writing these lines may be so entirely changed by legislation before the year ends, as not to be recognizable to a pains-taking student ; and it is better to refer him for the details of such organization to the current literature of the day.

100. *Militia.* The laws of the United States require the enrollment into the militia of all able-bodied males between the ages of eighteen and forty-five years, excepting those which are exempted by the laws of the United States, or may be exempted by the laws of the different States.

The militia of each State is required to be arranged into companies, battalions, regiments, brigades and divisions, as the legislature of the State may direct, and it shall be subject to military duty and shall serve a definite time.

These organizations are to be officered by the respective States, the grades and number of officers being named in the laws requiring the enrollment.

The militia may be or may not be uniformed ; and, except in especial cases, are not paid for their services.

101. There have been, however, found in every State, even where the militia is not uniformed, bodies of men, voluntarily associated together for military exercises, wearing a uniform, bearing some characteristic name, and frequently obtaining some special privileges.

These men are engaged in business operations which prevent their leaving home but for a short time, and as a rule receive no pay for their services. Although militia, they are distinguished from the general militia by the term "*volunteer.*"

102. The Constitution of the United States has given the power to Congress to provide for calling "forth the militia to execute the laws of the Union, suppress insurrections, and repel invasions." Congress, by legislation, has given the President the authority to call forth the militia under certain exigencies, as has been frequently done. When called into actual service of the United States, the militia receive pay from the government and are subject to the Rules and Articles of War.

The militia is therefore a part and parcel of the army of the United States, although in common use the term is limited to mean the regular army alone.

103. *Volunteers.* There is another class of troops not belonging to the regular army, nor to the militia, which have been raised by Congress and employed by the government. These troops are known as "*volunteers,*" and must not be confounded with the militia formed into volunteer companies.

When a sudden emergency demands, these volunteers are employed by authority of Congress, which gives the President the power to call for volunteers, limiting the number to be employed, and defining the proportions of the arms of service which they are to represent. As a rule the numbers of volunteers are proportioned among the States according to their population, and complete organizations of companies, battalions and regiments, are formed in each State and officered by the Governor of the State.

These organizations, when received into actual service of the United States, are arranged into brigades and divisions by the United States officers, and are commanded by general officers who, with their staff-officers, receive their appointments from the United States.

This makes an essential difference between them and the militia. And although these organizations assume the names of the States in which they volunteered for service, they are truly United States and not State troops, nor militia. They are troops raised by Congress, and although the company and regimental officers have been usually appointed by the governors of States, it is a permission granted, not a right yielded by Congress, to allow the officers to be appointed in that manner.

Hence, when employed by the government, they form a part of the army of the United States, and in organization, rights, etc., have the same privileges as the organizations of the regular army.

104. The army of the United States may then be said to be composed of the

*Regular Army*, whose commissioned officers hold commissions for an *indefinite* period, and whose non-commissioned officers and privates *enlist* or engage to serve the United States for a definite period ;

*Volunteers*, whose commissioned officers, non-commissioned officers and privates have volunteered to serve the United States for a definite period ;

*Paid Militia*, whose officers, non-commissioned officers and privates, are enrolled according to law and are subject to military duty for a definite period.

105. It will be observed that both the regular army and the volunteers serve the United States voluntarily, and that the militia, when the emergency comes, have no option in the matter, but if liable to duty, must serve in the army when called forth.

106. Congress raises, supports, governs, and regulates armies in the United States.

*Raising* is the means used to collect and to organize the troops; *Supporting* is the system of administration employed; *Government* is the formation of the military hierarchy, with rules for rewarding and punishing; and *Regulations* are the means of determining precisely the rights and duties of every individual in the army and of deciding upon the systems of tactics to be practiced.

### Formation of Troops.

107. A tactical unit placed upon the ground assumes, when threatened with an attack, a position or figure which is known as the "*formation*" of this unit.

That portion of the formation on the side towards the enemy is called the "*front*;" the side opposite to the front is termed the "*rear*;" the lateral extremities are called "*flanks*."

Any row of soldiers placed parallel to the front is called a "*rank*;" a row perpendicular to the front is called a "*file*;" the number of ranks measures the "*depth*" of the formation.

Troops drawn up so as to show an extended front, with slight depth, are said to be "*deployed*;" when the depth is considerable and the front comparatively small, they are said to be in a "*ployed*" formation.

The extent of front which a battalion of infantry should have when drawn up in line was defined, when it was stated that the battalion organization should not be so great as to prevent the voice of the commanding officer from being heard by the men on the extremities. This extent of front will fix the proper number of men for a battalion.

A distance of one hundred and fifty, and even as great as two hundred yards has been assumed to be the length of a suitable front.

With a front of two hundred yards, and an allowance of one pace for each man, there would be a few over two hundred and fifty men in a single rank, and five hundred in two ranks. The number of companies to form such a battalion can be easily determined.

108. The formation in two ranks is the one used by infantry on parades and in line of battle. In an actual engagement, it rapidly becomes a single rank.

Since a single rank would not be strong enough to resist a vigorous attack of the enemy, or it would not, at least, be safe to trust to it, a line formed of two ranks must be near at hand to support the single rank, or to receive the attack when this rank is driven back.

The attack in masses of great depth, or columns, may be said to have been abandoned. Still, in order that an attack shall be successful, all other things being equal, a preponderance of fire, and therefore of numbers of men must be brought to bear upon the position to be taken.

Since it is not expedient to expose troops under fire when drawn up in formations of a greater depth than two ranks, it becomes essential that the formation be so arranged that it

can, under such circumstances, pass rapidly from a deep formation into a thin line, or as known in minor tactics, pass quickly "from column into line."

109. Cavalry is governed by the same general rules laid down for infantry.

The tactical unit of cavalry cannot have so great a front as that for infantry, because of the noise produced by the horses and by the rattling of the arms, which drown the voice of the commander. A length of about one-half of that determined for the battalion is ordinarily taken as a suitable one for the front of the tactical unit of cavalry.

Cavalry is drawn up in two ranks. One rank is all that is effective as far as the offensive is concerned; the second rank being most useful in pushing the front rank forward and filling the vacancies caused by casualties.

110. It would seem that if for the same front the depth of the formation vary, the effect produced by it would be in the ratio with the mass. This is not the case, as it is simply impossible for the whole body to act as a compact mass. The question then returns to the use of cavalry in its most general sense. Upon this use the formation depends.

The modern fire-arm renders a charge of a mass of cavalry upon a firm body of infantry a matter of impracticability. Cavalry to be effective must dismount and fight on foot, as long as the enemy makes resistance worthy of the name. The enemy in a disorganized condition, or retreating, can be effectively annoyed by cavalry. As sentinels, patrols, as couriers, or advanced guards, on reconnoissance, etc., cavalry performs an essential part; and its formation of two ranks

offers many and great conveniences for the movements to be made.

111. The artillery unit is sometimes styled a *battery*. A battery generally consists of six pieces, although sometimes four only are employed. Twelve yards are allowed to the front of each piece. The number of guns in the battery and this distance for each gun will determine the length of front for a battery. The number of men, generally from twenty to thirty for each piece, will determine the total number for a company.

Each piece should have its own caisson, which takes its place about fifty yards behind its gun. Irregularities of ground may be employed to vary this distance between the caisson and gun.

112. The formation of engineer troops follows the general rules laid down for infantry. The men being used in small detachments by themselves or detached in charge of other troops, the same reasons for their formation, when in the discharge of their regular duties, do not apply. But as they may have to defend themselves, or even to act with others on the offensive, they will be for the time acting as infantry; hence the formation of two ranks, and the extent of front should be the same for them as for the other troops.



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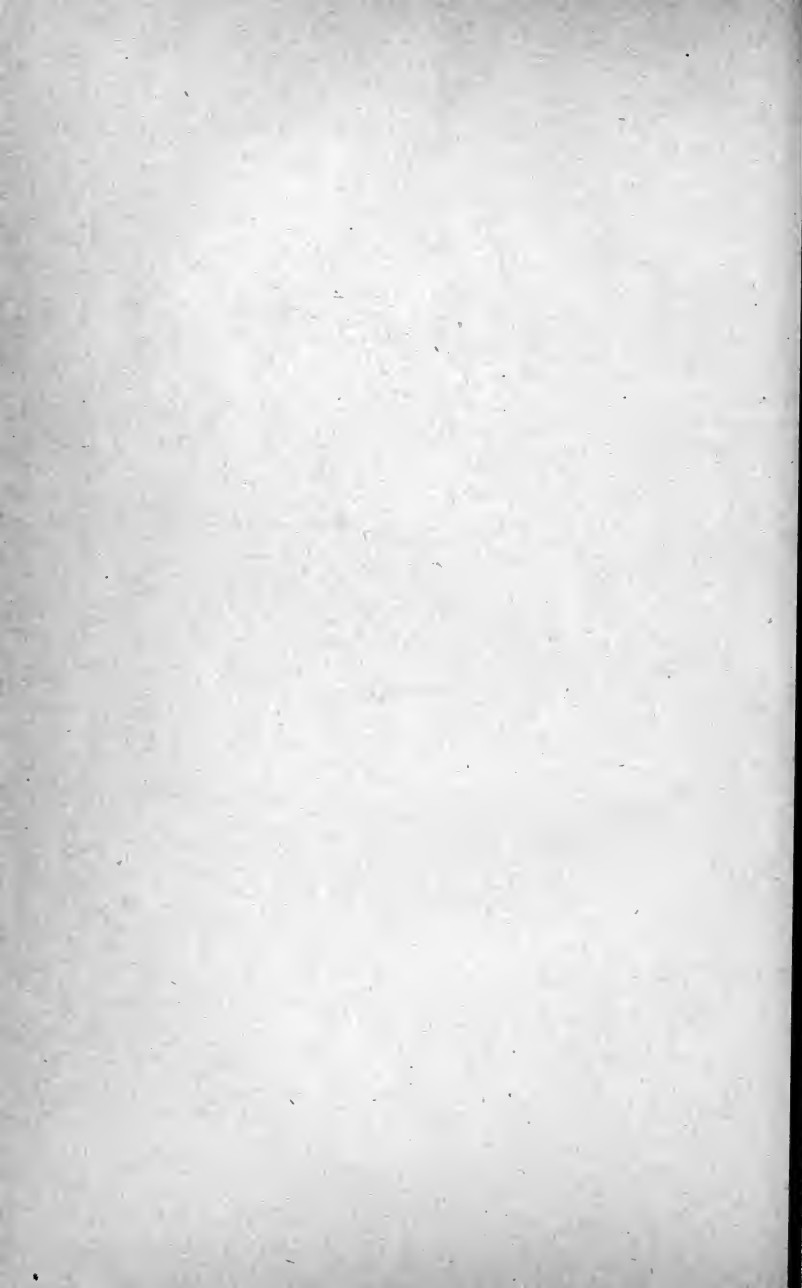
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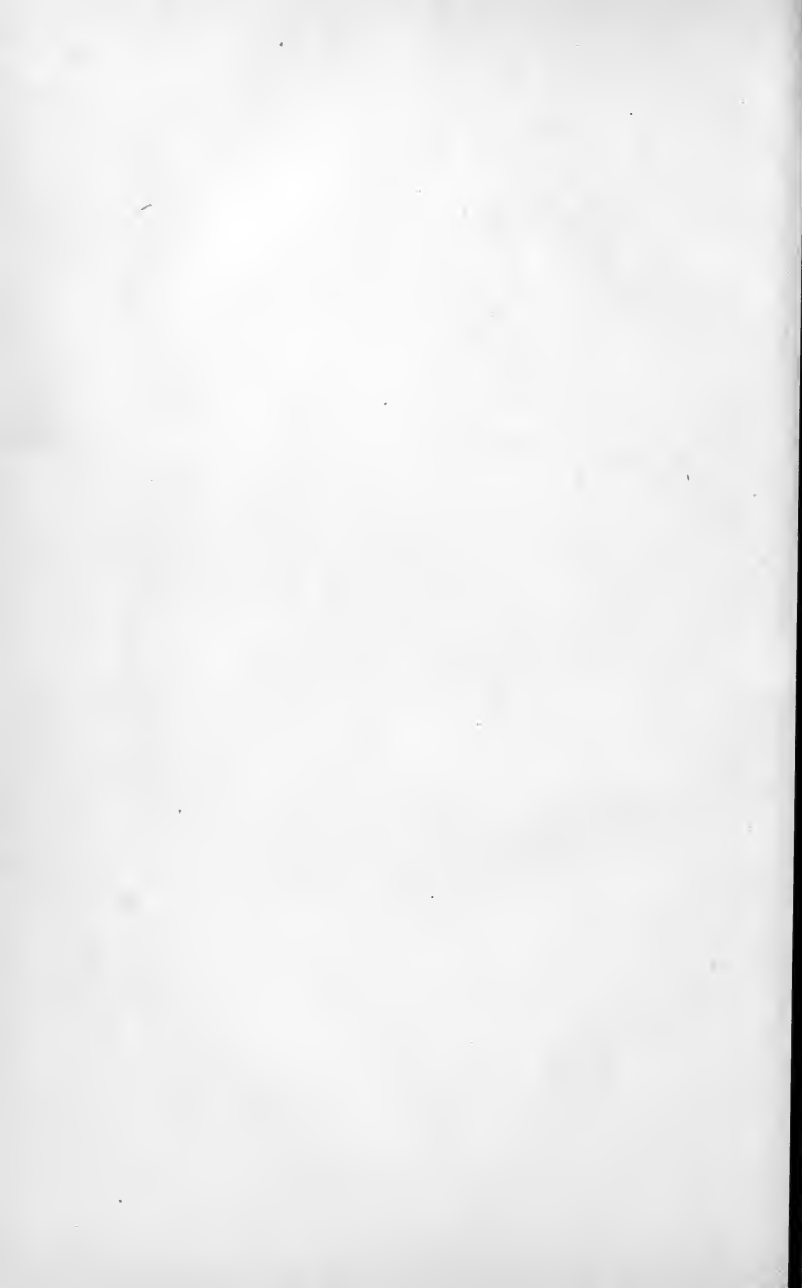
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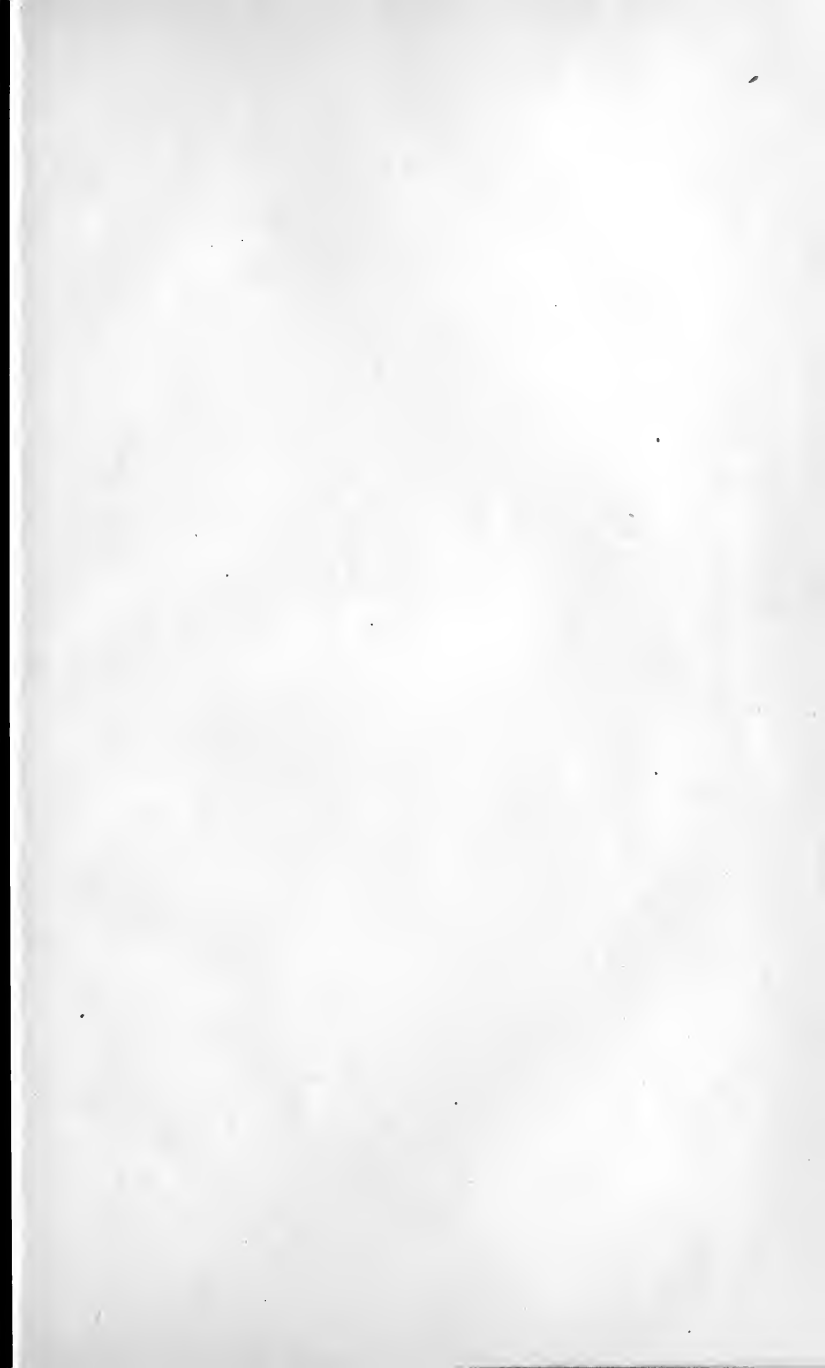
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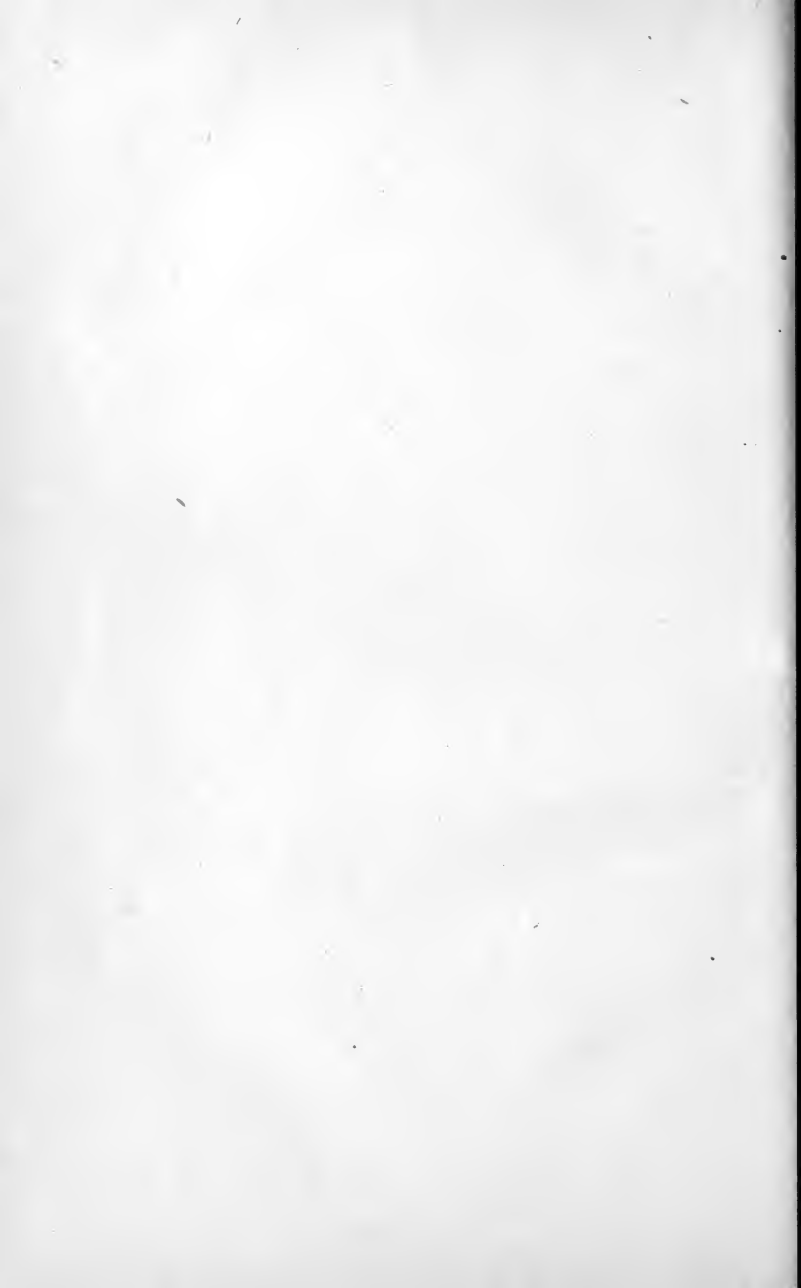
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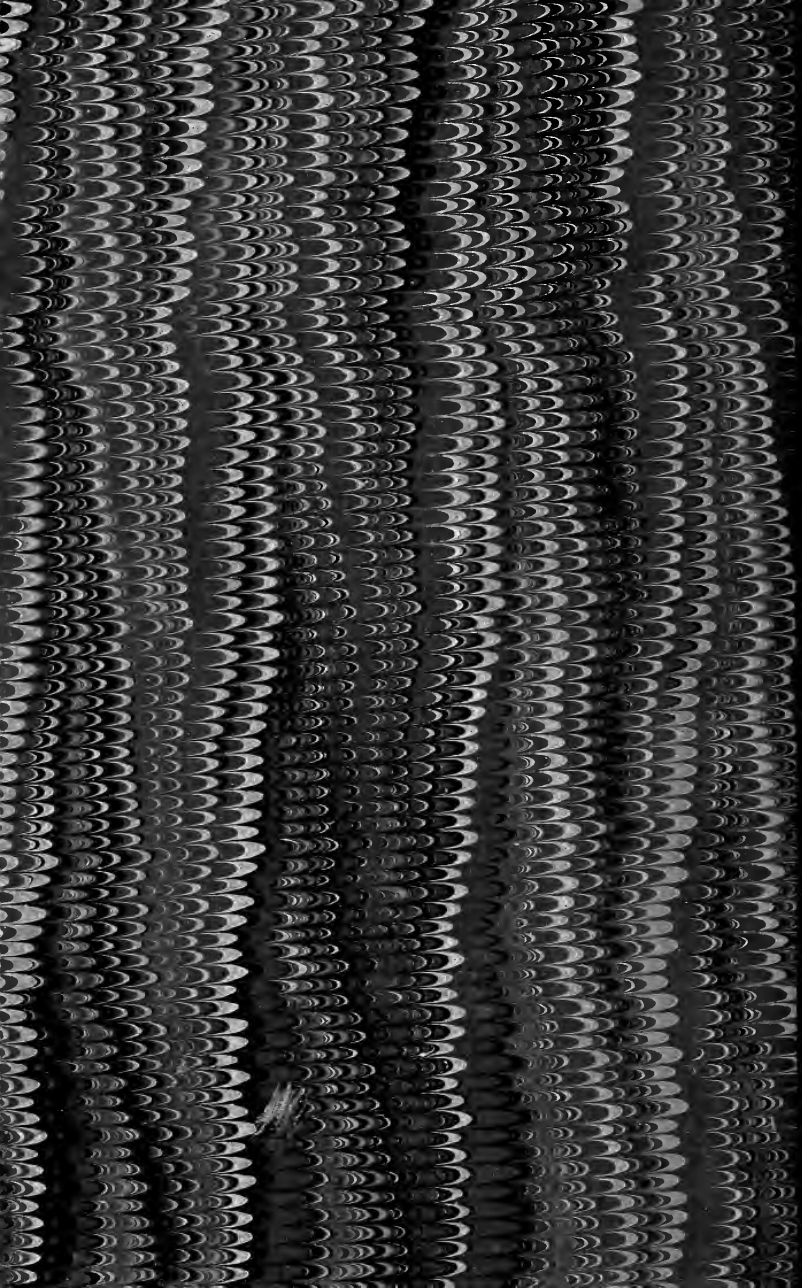




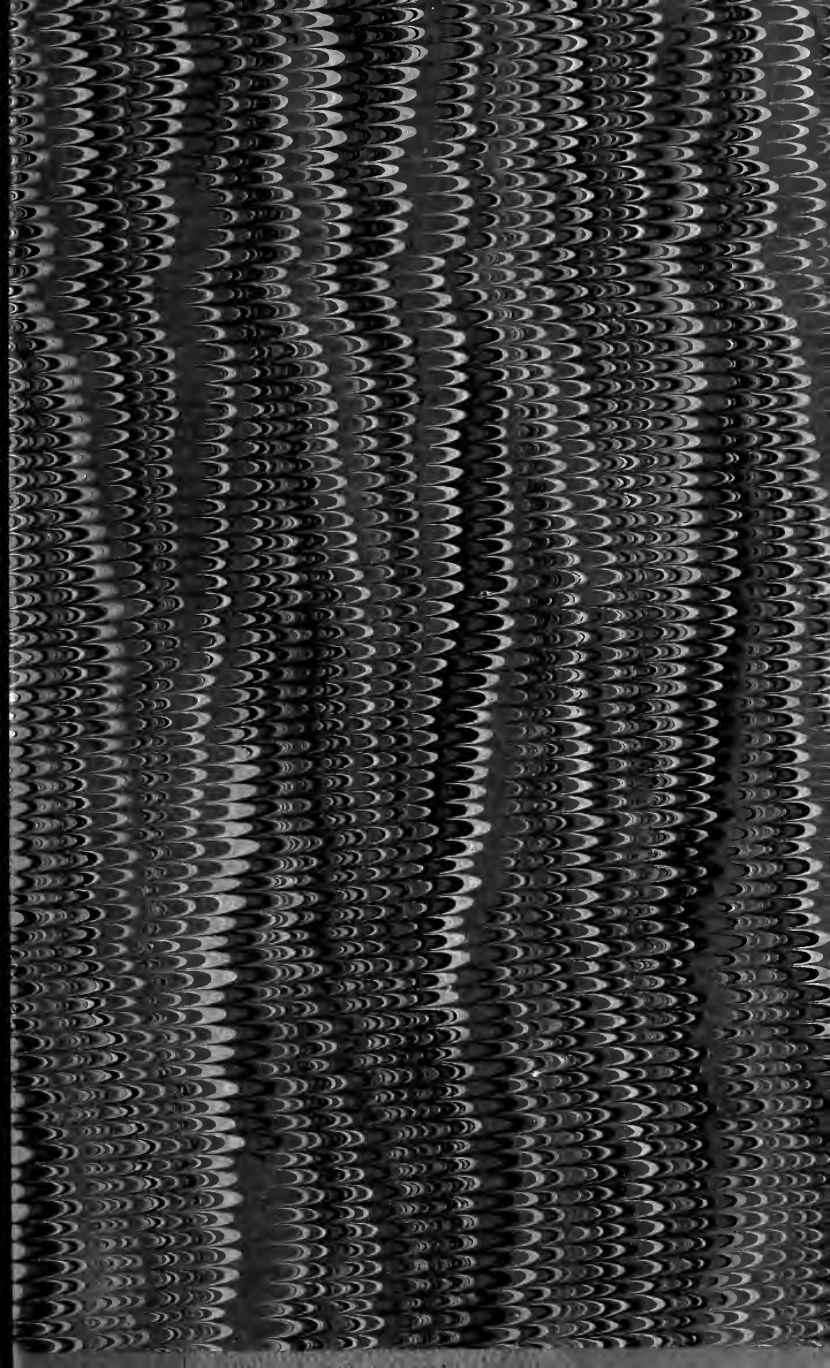












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